

## **Claims**

1. An electronic pen for recording motion data relating to use of the pen, comprising:  
a pen body;  
a ball mounted in the pen body;  
a sensor in the pen body, located proximate the ball, for detecting motion of the ball and  
converting the motion into corresponding electronic signals; and  
a memory in the pen body, electronically coupled to the sensor, for receiving the electronic  
signals and storing corresponding data related to the motion.
2. The electronic pen of claim 1, further including a removeable ink cartridge, disposed within the  
pen body, for applying ink to the ball.
3. The electronic pen of claim 1, further including a port, located on the pen body and  
electronically coupled to the memory, for use in transferring the data from the memory to an external  
device.
4. The electronic pen of claim 1, further including a circuit, electronically coupled to the sensor and  
the memory, for sampling the sensor at a particular rate and controlling transmission of a sampled  
electronic signal from the sensor to the memory.

5. The electronic pen of claim 1, further including a module for receiving the data and for converting the data into a visual representation of the motion of the ball.
6. The electronic pen of claim 5, further including a module for storing the visual representation.
7. The electronic pen of claim 1 wherein the sensor includes dual sensors for detecting directions from which orthogonal ball motions can be reconstructed.
8. The electronic pen of claim 7 wherein the memory stores as the data coordinates representing the directions from which the orthogonal ball motions can be reconstructed.
9. The electronic pen of claim 1 wherein the memory stores an indication of a set of the motion data and a default location for a start of the corresponding motion.
10. The electronic pen of claim 1 wherein the memory comprises an atomic resolution storage memory.
11. A method for recording motion data relating to use of a pen having a pen body, a ball mounted in the pen body, a memory, and a sensor located proximate the ball, comprising:
- detecting motion of the ball using the sensor;

converting the motion into corresponding electronic signals;

receiving the electronic signals; and

storing in the memory, based upon the electronic signals, corresponding data related to the motion.

12. The method of claim 11, further including providing a removeable ink cartridge, disposed within the pen body, for applying ink to the ball.

13. The method of claim 11, further including electronically transferring the data from the memory to an external device.

14. The method of claim 11, further including:  
sampling the sensor at a particular rate; and  
controlling transmission of a sampled electronic signal from the sensor to the memory.

15. The method of claim 11, further including:  
receiving the data;  
converting the data into a visual representation of the motion of the ball.

16. The method of claim 15, further including storing the visual representation.

17. The method of claim 11 wherein the detecting step includes using dual sensors for detecting directions from which orthogonal ball motions can be reconstructed.

18. The method of claim 17 wherein the storing step includes storing as the data coordinates representing the directions from which the orthogonal ball motions can be reconstructed.

19. The method of claim 11 wherein the storing step includes storing an indication of a set of the motion data and a default location for a start of the corresponding motion.

20. The method of claim 11 wherein storing step includes using an atomic resolution storage memory for storing the data.